

**SIEMENS**PATENT  
Attorney Docket No. 00P7919US**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Inventor:	Gordon Israelson	)	Group Art Unit:	1745
Serial No.:	09/669,784	)	Examiner:	D. Yuan
Filed:	September 25, 2000	)		

Title: **DESULFURIZATION FOR FUEL CELL SYSTEMS USING SULPHUR  
SEPARATING MEMBRANES****APPELLANT'S REPLY BRIEF AND REQUEST FOR ORAL HEARING**Assistant Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Pursuant to 37 C.F.R. § 1.193(b), this Reply Brief and Request for Oral Hearing is responsive to the Examiner's Answer mailed November 27, 2002. Appellant replies as follows:

**INTRODUCTION**

The Examiner's Answer fails to identify where Willis discloses Applicant's claimed process step of "passing the sulfur concentrated stream back to the main fuel cell stream" and Applicant's claimed process step that "the sulfur concentrated stream does not mix with the sulfur lean stream." In addition, the Examiner's Answer improperly adds new matter to Applicant's invention and then seeks to reject Applicant's claims by generally reading Willis on the newly added matter. For these reasons, among others, Appellant respectfully requests that the Board overturn the outstanding rejection.

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**THE EXAMINER HAS FAILED TO IDENTIFY WHERE WILLIS DISCLOSES  
APPLICANT'S CLAIMED PROCESS STEPS**

Claims 1-20 each recite the process step of "passing the sulfur concentrated stream back to the main fuel feed stream." As shown in Figure 1, a portion of the main fuel feed stream (10) is directed to a subordinate stream (12). The subordinate stream (12) is then subjected to a sulfur selective membrane (14) which separates the subordinate stream (12) into a sulfur concentrated stream (18) and a sulfur lean stream (20). The sulfur concentrated stream (18) is subsequently passed back to the main fuel feed stream (10) at a point (22) downstream from point (24) so that the main fuel feed stream (10) is enriched with odorous sulfur compounds, enhancing gas leak detection. Specification, e.g., page 7, lines 24-30.

The Examiner's Answer purports to read this limitation onto Willis by stating "the limitation encompasses feeding the sulfur-rich stream in alternate locations, as indicated in the marked up copy of Figure 1." This is a fundamental error of patent examination. The Examiner must read the reference on the claim limitation. Instead of doing so, the Examiner adds of new matter to Applicant's invention - matter that forms no part of Applicant's invention as claimed and disclosed in the specification - and then generally states that the Willis reference discloses this limitation. However, the Examiner still fails to disclose or explain where or how Willis reads on the claim limitation. Thus, the Examiner's rejection must fail, as described below.

Applicant's claimed invention recites that a portion of the main fuel feed stream is diverted to the subordinate stream prior to the membrane separation step and that the sulfur concentrated stream is passed back from the subordinate stream to the main fuel feed stream. Willis does not divert a portion of the raw gas stream to a subordinate stream prior to the membrane separation step and does not subsequently pass the sulfur concentrated stream from the subordinate stream back to the raw gas stream. Thus, Willis cannot obviate

Applicant's claimed invention, irrespective of the Examiner's improper addition of new matter into the claims.

Claims 19-20 further recite that "the sulfur concentrated stream does not mix with the sulfur lean stream." As shown in Figure 1, the sulfur concentrated stream (18) is subsequently passed back to the main fuel feed stream (10) and the sulfur lean stream is subsequently passed to the fuel cells (38). Specification page 8, lines 1-15. The Examiner's Answer states "Applicant's claim limitation is met, even though Willis included additional steps, further in the process, which include mixing." Thus, the Examiner's Answer itself admits that the sulfur concentrated stream and the sulfur lean stream in Willis are mixed. Therefore, Willis does not read on Applicant's claimed invention.

**THE EXAMINER IMPROPERLY ADDS NEW MATTER TO APPLICANT'S INVENTION  
AND THEN ATTEMPTS TO INVALIDATE APPLICANT'S CLAIMS  
BASED ON THIS NEW MATTER**

The Examiner's Answer provides a "marked up copy of Figure 1" and reads Willis onto this marked up copy. The marked up copy adds dotted lines that the Examiner apparently believes Applicant's sulfur concentrated stream could conceivably follow. Even given a broadest reasonable interpretation of the claims and specification, the Examiner's newly added stream path is simply not disclosed in the specification and, in fact, contradicts what the specification teaches.

The Examiner's interpretation of what Applicant's claims cover cannot be considered to be reasonable. In particular, the dotted lines suggest that the sulfur concentrated stream (18) could be mixed with the sulfur lean stream (20). However, mixing these streams is clearly contrary to Applicant's invention. For example, the background section of the specification explains that reducing sulfur concentration in order to reduce sulfur poisoning of the SOFC fuel electrodes is an important object of the invention. Mixing the streams as suggested by the

Examiner would go against the reduction of sulfur poisoning teaching of the invention. For another example, the specification further explains that passing the sulfur concentrated stream back into the main fuel feed stream is a convenient and efficient way to dispose of the sulfur concentrated stream. Specification page 7, lines 23-30. Mixing the streams as suggested by the Examiner would go against this sulfur disposition teaching. For another example, more generally, the entire specification teaches segregating the sulfur concentrated stream from the sulfur lean stream, passing the sulfur concentrated stream back to the main fuel feed stream and passing the sulfur lean stream to the SOFC. Mixing the streams as suggested by the Examiner goes against this entire teaching in the specification. Therefore, the Examiner's newly added stream path, which takes the sulfur concentrated stream and combines it with the sulfur lean stream, runs completely contrary to the intent and purpose of Applicant's specification and cannot be considered to form part of the invention given a broadest reasonable interpretation.

#### REQUEST FOR ORAL HEARING

Appellant hereby requests an oral hearing of the appeal in this application under 37 C.F.R. § 1.194(b). The fee required by 37 C.F.R. § 1.17 is submitted herewith.

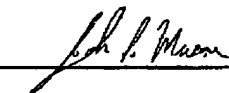
#### CONCLUSION

For the reasons set forth above and in Applicant's Brief, Appellant respectfully requests that the honorable board overturn the outstanding rejections.

Respectfully submitted,

Dated: 1/23/03

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**OFFICIAL****SIEMENS****FACSIMILE COVER SHEET**In the UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Gordon Israelson

Application No. 09/869,784

Filed: September 25, 2000

Title: DESULFURIZATION FOR FUEL CELL SYSTEMS USING SULPHUR  
SEPARATING MEMBRANES

Examiner: Dah-Wei D. Yuan

Art Unit: 1745

➔ **FACSIMILE ATTN TO: DAH-WEI D. YUAN FAX NO.: 703-872-9311****APPELLANT'S REPLY BRIEF AND REQUEST FOR ORAL HEARING**Commissioner for Patents  
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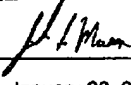
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	Filing Date	September 25, 2000	
	First Named Inventor	Gordon Israelson	
	Group Art Unit	1745	
	Examiner Name	Dah-Wei D. Yuan	
Total Number of Pages in This Submission	6	Attorney Docket Number	00P7919US

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